

Serial No.: 09/682,540
Confirmation No.: 5619
Applicant: DANIELSSON, Mats
Atty. Ref.: 06730.0011.NPUS00

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1-15 (Canceled)

16. (Previously Submitted) A method for scanning in an X-ray apparatus comprising:
an essentially planar member of a material non-transparent to X-rays, having an elongated slot
formed therein,

an array of detectors provided in communication with said slots and arranged to detect -
rays and for providing a signal representing the intensity of said X-rays imaging thereon,

means for moving a beam directing member and an object to be examined relative each
other,

wherein said array of detectors comprises substantially in parallel arranged detector
arrangements consisting of one or several carrying members, each arranged on at least one face
with detectors comprising a plurality of sensors provided on a substrate, and wherein said
detectors are arranged substantially edge to edge and side by side at least one side of said
carrying member,

wherein the method comprises the steps of:

arranging a first part of collimators before start of the scanning in a field of view while
the second part of the collimators are outside the field of view,

starting the scan from a first position and said collimators and detectors having a first
speed,

bringing the said collimators and detectors to a maximum, substantially constant speed
when all collimators and detectors are in the field of view, and

when the first collimator is outside the field of view, bringing the said collimators and
detectors to a third speed, wherein the further step of stopping the scan when said second part of
the collimators are outside the field of view.

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17. (Previously Submitted) A method for scanning in an X-ray apparatus comprising:
an essentially planar member of a material non-transparent to X-rays, having an elongated slot
formed therein,

an array of detectors provided in communication with said slots and arranged to detect -
rays and for providing a signal representing the intensity of said X-rays imaging thereon,
means for moving a beam directing member and an object to be examined relative each
other,

wherein said array of detectors comprises substantially in parallel arranged detector
arrangements consisting of one or several carrying members, each arranged on at least one face
with detectors comprising a plurality of sensors provided on a substrate, and wherein said
detectors are arranged substantially edge to edge and side by side at least one side of said
carrying member,

wherein the method comprises the steps of:
arranging a first part of collimators before start of the scanning in a field of view while the
second part of the collimators are outside the field of view,

starting the scan from a first position and said collimators and detectors having a first
speed,

bringing the said collimators and detectors to a maximum, substantially constant speed
when all collimators and detectors are in the field of view, and

when the first collimator is outside the field of view, bringing the said collimators and
detectors to a third speed, wherein an acceleration time before the scan reaches a maximum
speed and a deceleration time before it stops is determined in such a way that the 10 parts of an
image where the acceleration and retardation takes place obtains substantially a same photon
statistics as the rest of the image.

18-22. (Canceled)

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23. (Previously Submitted) The method according to claim 17, further comprising providing an arrangement for detecting X-ray radiation, said arrangement comprising:

a carrying member having detectors on a side thereof, said detectors including a plurality of sensors provided on a substrate;

said detectors being arranged substantially edge-to-edge and side-by-side in at least one row on said side of carrying member; and

said detectors comprising a sensor plane being substantially parallel to a surface of said carrying member and said carrying member being arranged so that said sensor plane is angularly oriented otherwise than perpendicular to incident X-ray beams, and wherein at least two detectors are arranged in at least two levels, said levels being displaced relative one to the others and such that an inactive section of at least one detector is overlapped with an active section of another detector.

24. (Previously Submitted) The method according to claim 23 wherein said sensor plane is arranged in parallel to incident X-ray beams.

25. (Previously Submitted) The method according to claim 23 wherein said carrying member is tilted to arrange said sensor plane in said angle.

26. (Previously Submitted) The method according to claim 23 wherein said detector is arranged on a supporting member.

27. (Previously Submitted) The method according to claim 23 wherein the detectors are further comprised of a scintillator optically connected to a CCD, silicon diodes, a gaseous detector, a parallel plate chamber where the gas volume is oriented edge-on to the incident X-ray's.

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28. (Previously Submitted) The method according to claim 17, further comprising providing an X-ray apparatus comprising:

an essentially planar member of a material non-transparent to X-rays, having an elongated slot formed therein,

an array of detectors provided in communication with said slots and arranged to detect X-rays and for providing a signal representing the intensity of said X-rays imaging thereon,

a moving arrangement configured to move a beam directing member relative to an object to be X-ray examined;

said detector array further comprising individual detectors positioned substantially in parallel with at least one carrying member;

each detector arranged on a face of a carrying member and comprising a plurality of sensors provided on a substrate, said detectors being arranged substantially edge-to-edge and side-by-side on said face of said carrying member; and

each detector comprising a sensor plane, said sensor plane being substantially parallel to a surface of said carrying member and said carrying member being arranged so that said sensor plane is angularly oriented otherwise than perpendicular to incident X-ray beams.

29. (Previously Submitted) The method according to claim 28 wherein at least two detectors are arranged in at least two levels, said levels being displaced relative one to the others and such that an inactive section of at least one detector is overlapped with an active section of another detector.

30. (Previously Submitted) The method according to claim 28 wherein each of said detectors has a sensor plane, said sensor plane being arranged at an angle other than perpendicular to incident X-ray beams.

31. (Previously Submitted) The method according to claim 28 wherein each of said detectors has a sensor plane, said sensor plane being arranged in parallel with incident X-ray beams.

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32. (Previously Submitted) The method according to claim 28 wherein said beam directing member includes slots arranged in at least two rows, and said slots in each row are displaced relative each other.

33. (Previously Submitted) The method according to claim 28 wherein said beam directing member is one of a refracting and focusing member.

34. (Previously Submitted) The method according to claim 28 further comprising:
means for acquiring data from said detector arrays at intervals corresponding to a fraction of a width of said detector arrays.

35. (Previously Submitted) The method according to claim 34 wherein said sensors of said detector arrays are made of silicon wafers oriented substantially edge-on to incident X-rays.

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36. (Previously Submitted) The method according to claim 17, further comprising providing an X-ray apparatus comprising:

- an essentially planar member of a material non-transparent to X-rays, having an elongated slot formed therein,

- a detector array provided in communication with said slots and arranged to detect -rays and for providing a signal representing the intensity of said X-rays imaging thereon,

- a moving arrangement configured to move a beam directing member relative to an object to be X-ray examined;

- said detector array further comprising individual detectors positioned substantially in parallel with at least one carrying member;

- each detector arranged on a face of a carrying member and comprising a plurality of sensors provided on a substrate, said detectors being arranged substantially edge-to-edge and side-by-side on said face of said carrying member; and

- each detector comprising a sensor plane, said sensor plane being substantially parallel to a surface of said carrying member and said carrying member being arranged so that said sensor plane is angularly oriented otherwise than perpendicular to incident x-ray beams;

- starting a scan;

- positioning said slots and corresponding detectors substantially outside a field of view when the scan starts;

- passing substantially all slots and corresponding detectors over and object to be X-rayed and thus establishing said field of view;

- measuring scan X-ray fluxes together with position coordinates for all detectors; and

- terminating the scan only after all slots and corresponding detectors are substantially outside the field of view.

37. (Previously Submitted) The method according to claim 36, further comprising:

- incrementing the scanning at least a distance corresponding to a fraction of a distance of the detectors arrangements.

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38. (Previously Submitted) The method according to claim 37 wherein the scan is continuous and a readout of data is performed at intervals corresponding to a fraction of a distance between the detector arrangements.

39. (Previously Submitted) The method as claimed in claim 37 wherein readout data for each increment and for each sensor array is stored as data arrays, and wherein said stored data for each sensor array is separately combined to form an image, and wherein images obtained by each sensor array are superposed to form a final image.

40. (New) A method for scanning in an X-ray apparatus comprising:

providing an essentially planar member of a material non-transparent to X-rays, having an elongated slot formed therein, an array of detectors provided in communication with said slots and arranged to detect X-rays and for providing a signal representing the intensity of said X-rays imaging thereon, means for moving a beam directing member and an object to be examined relative each other, wherein said array of detectors comprises substantially in parallel arranged detector arrangements consisting of one or several carrying members, each arranged on at least one face with detectors comprising a plurality of sensors provided on a substrate, and wherein said detectors are arranged substantially edge to edge and side by side at least one side of said carrying member;

arranging a first part of collimators before start of the scanning in a field of view while the second part of the collimators are outside the field of view; and

starting the scan from a first position and said collimators and detectors having a first speed.

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41. (New) The method according to claim 40, further comprising:

bringing the collimators and detectors to a maximum, substantially constant speed when all collimators and detectors are in the field of view; and

bringing the collimators and detectors to a third speed when the first collimator is outside the field of view.